Figure 1

Figure 2A

Figure 2B

310

Platform

320

Interface Module

300

330a

Interface
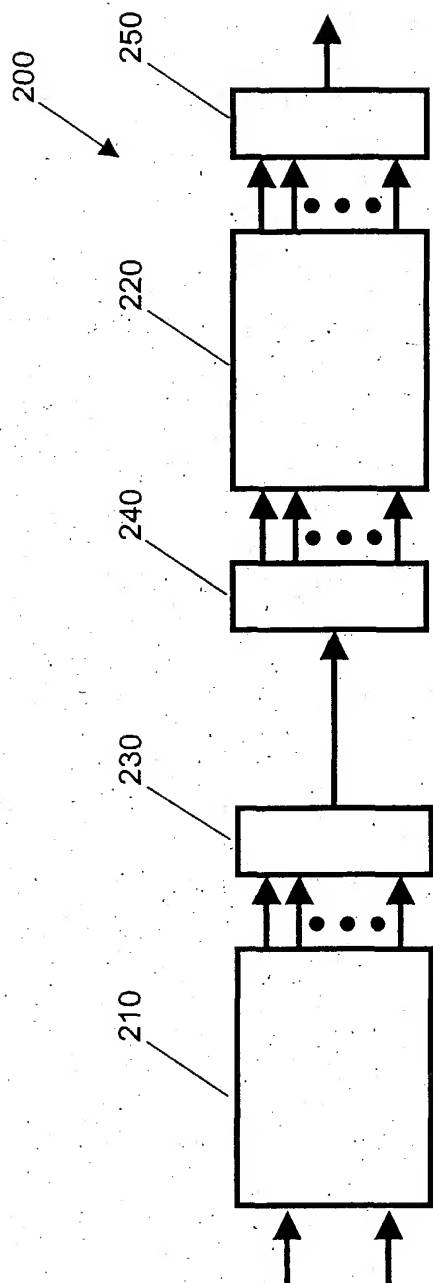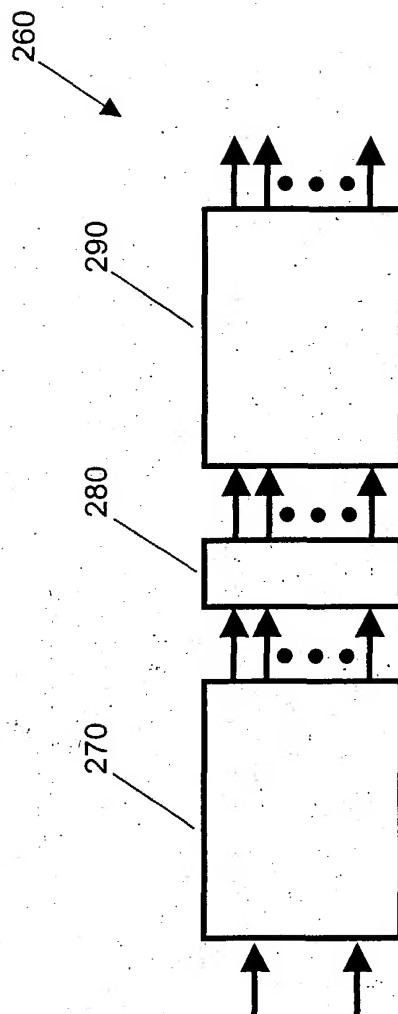
340a

Application
A

330b

Interface

340b

Application
B

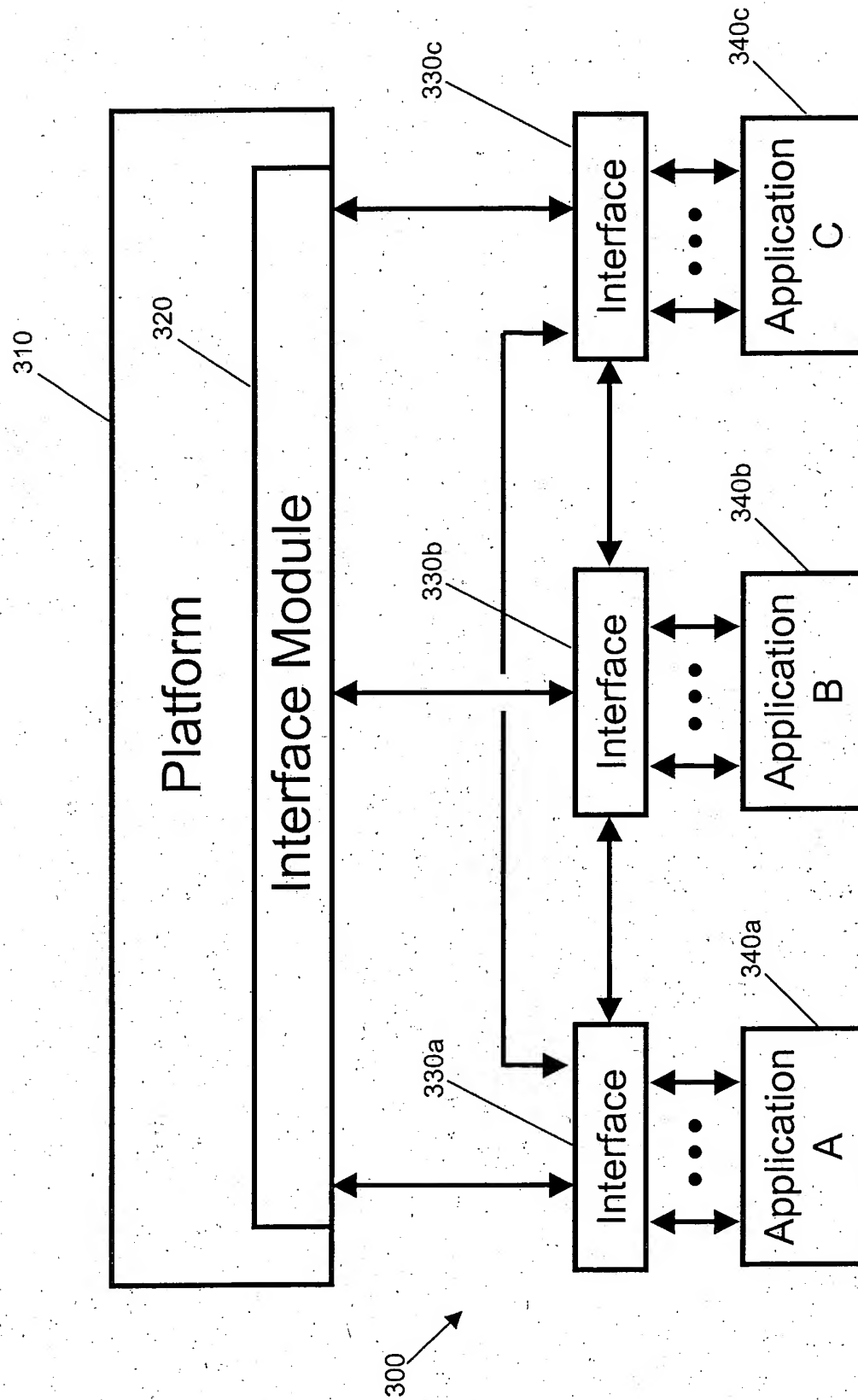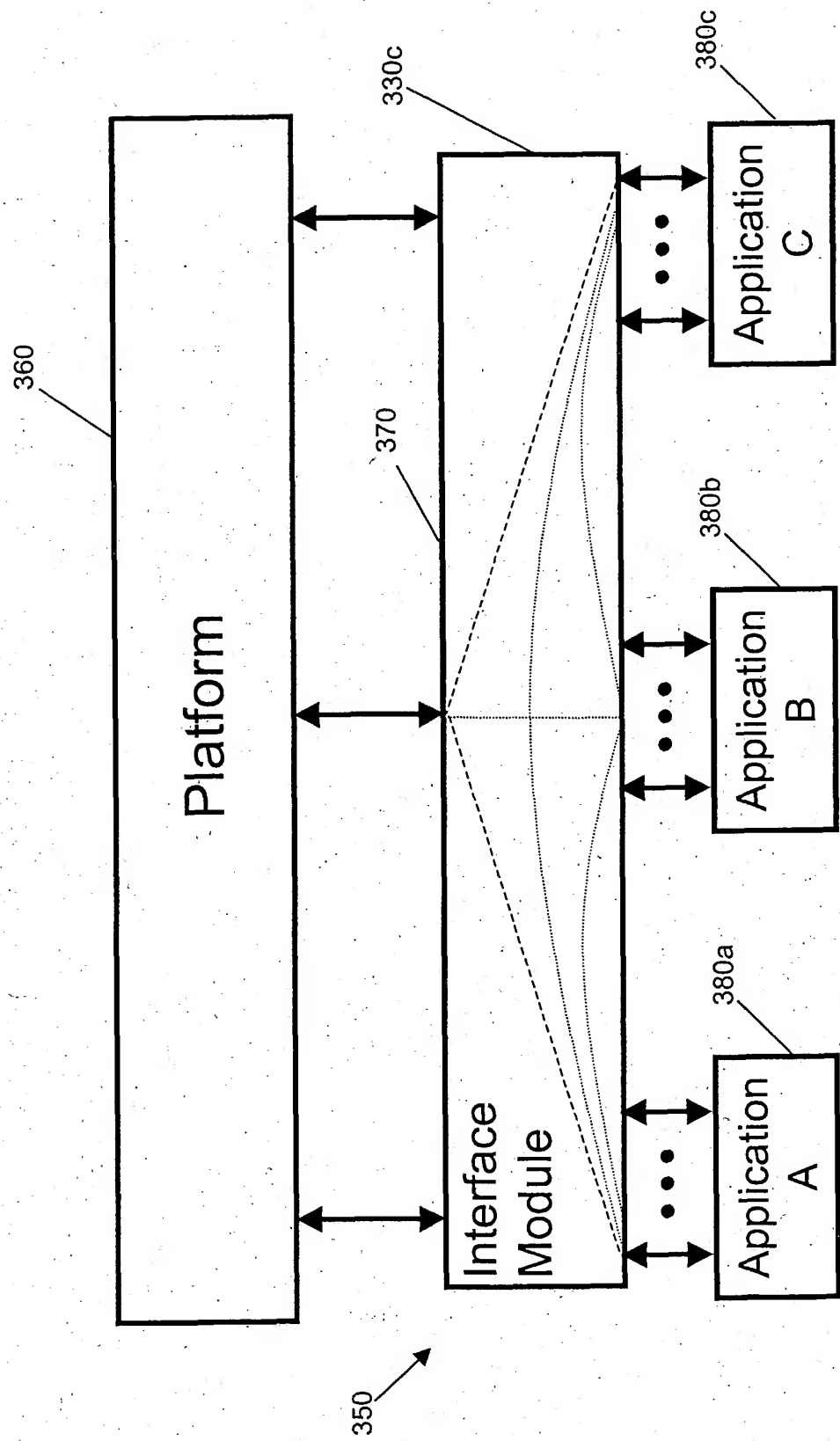330c

Interface

340c

Application
C

Figure 3A

Figure 3B

Figure 4

Figure 5

```
<!ELEMENT state (name,description,data*) >
<!-- Name --->
<!ELEMENT name (#PCDATA) >————610
<!-- Description --->
<!ELEMENT description (#PCDATA) >————620
<!-- Description Elements --->
<!ELEMENT data (#PCDATA) >
<!ATTLIST name    CDATA    #REQUIRED>————630
```

Figure 6A

```
<?xml version="1.0" standalone="no" ?>
<!DOCTYPE state (View Source for full doctype...)>
<state>
<name>PDF</name>
<description>Normal</description>
<data name="Mean">0.200</data>
<data name="Stdv">0.001</data>
</state>
```
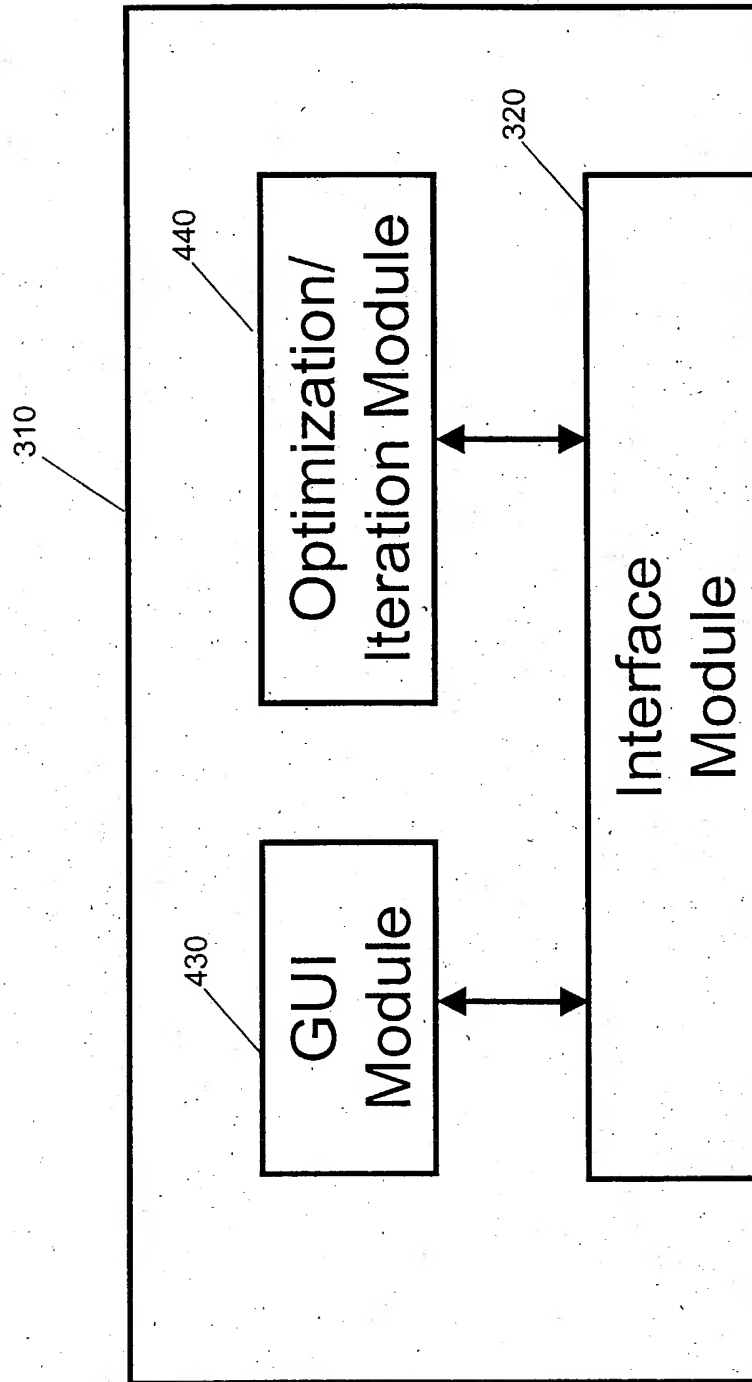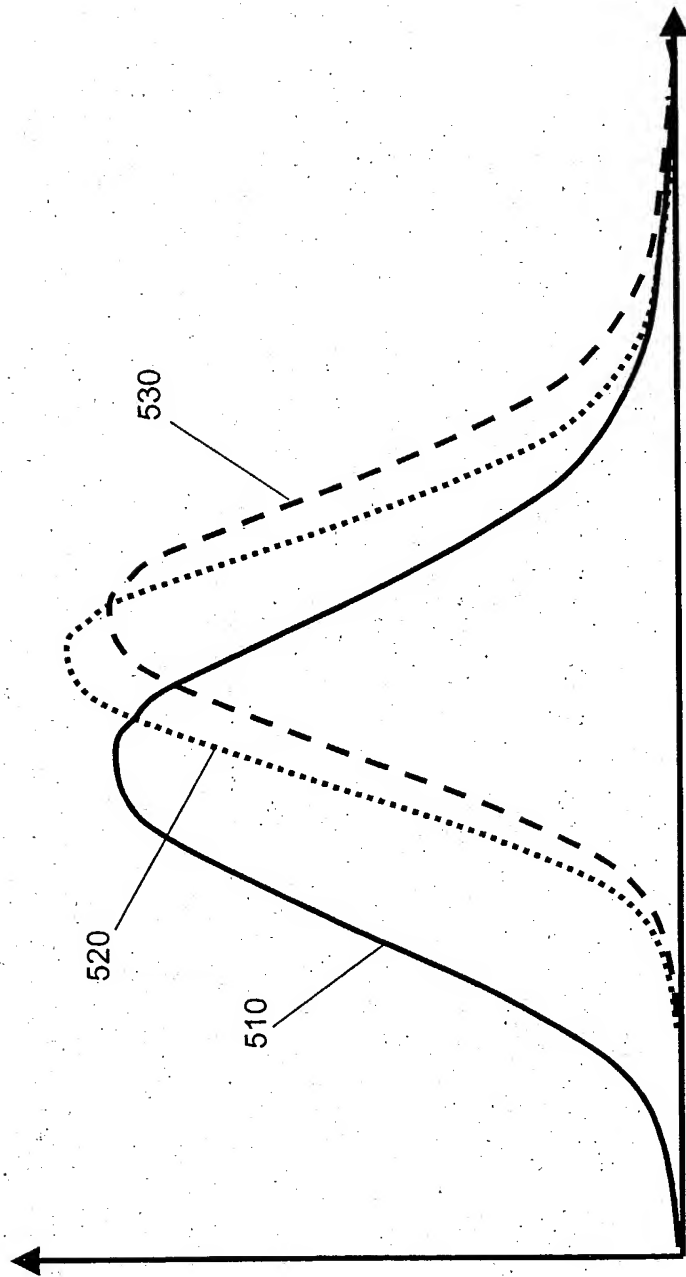
Figure 6B

```
<!ELEMENT model (input*, (submodel | cluster | component)*, output*)>
    <!ATTLIST model name CDATA #REQUIRED>
<!ELEMENT input (parameter*)>
    <!ATTLIST input name CDATA #REQUIRED>
<!ELEMENT output (parameter*)>
    <!ATTLIST output name CDATA #REQUIRED>
<!ELEMENT parameter (name, description, data*)>
<!ELEMENT name (#PCDATA)>
<!ELEMENT description (#PCDATA)>
<!ELEMENT data (#PCDATA)>
    <!ATTLIST data name CDATA #REQUIRED>
<!ELEMENT submodel (input*, (cluster | component)*, output*)>
    <!ATTLIST submodel name CDATA #REQUIRED>
<!ELEMENT cluster (input*, component*, output*)>
    <!ATTLIST cluster name CDATA #REQUIRED>
<!ELEMENT component (input*, system, output*)>
    <!ATTLIST component name CDATA #REQUIRED>
<!ELEMENT system (parameter*)>
```

650

Figure 6C

```
<model name="model">
<input name="input1">
<parameter>
<name>I1</name>
<description>Normal PDF</description>
<data name="mean">0.200</data>
<data name="stdv">0.001</data>
</parameter>
</input>
<!-- Sub Model Description (inputs, internal parameters, outputs) -->
<submodel name="submodel-A">
<cluster name="cluster-D">
<component name="component-A">
<!-- Uncertainties in submodel inputs -->
<input name="input-A'-1">
<parameter>
<name>IA1</name>
<description>Normal PDF</description>
<data name="mean">0.300</data>
<data name="stdv">0.002</data>
</parameter>
<!-- Uncertainties in submodel parameters -->
</input>
<system>
<parameter>
<name>A1</name>
<description>Normal PDF</description>
<data name="mean">0.500</data>
<data name="stdv">0.010</data>
</parameter>
</system>
<!-- Uncertainties in submodel outputs -->
<output name="output-A'-1">
<parameter>
<name>OA1</name>
<description>Normal PDF</description>
<data name="mean">0.330</data>
<data name="stdv">0.004</data>
</parameter>
</output>
</component>
</cluster>
</submodel>
<!-- Uncertainties in outputs from overall model -->
<output name="output1">
<parameter>
<name>O1</name>
<description>Normal PDF</description>
<data name="mean">0.400</data>
<data name="stdv">0.005</data>
</parameter>
</output>
</model>
```
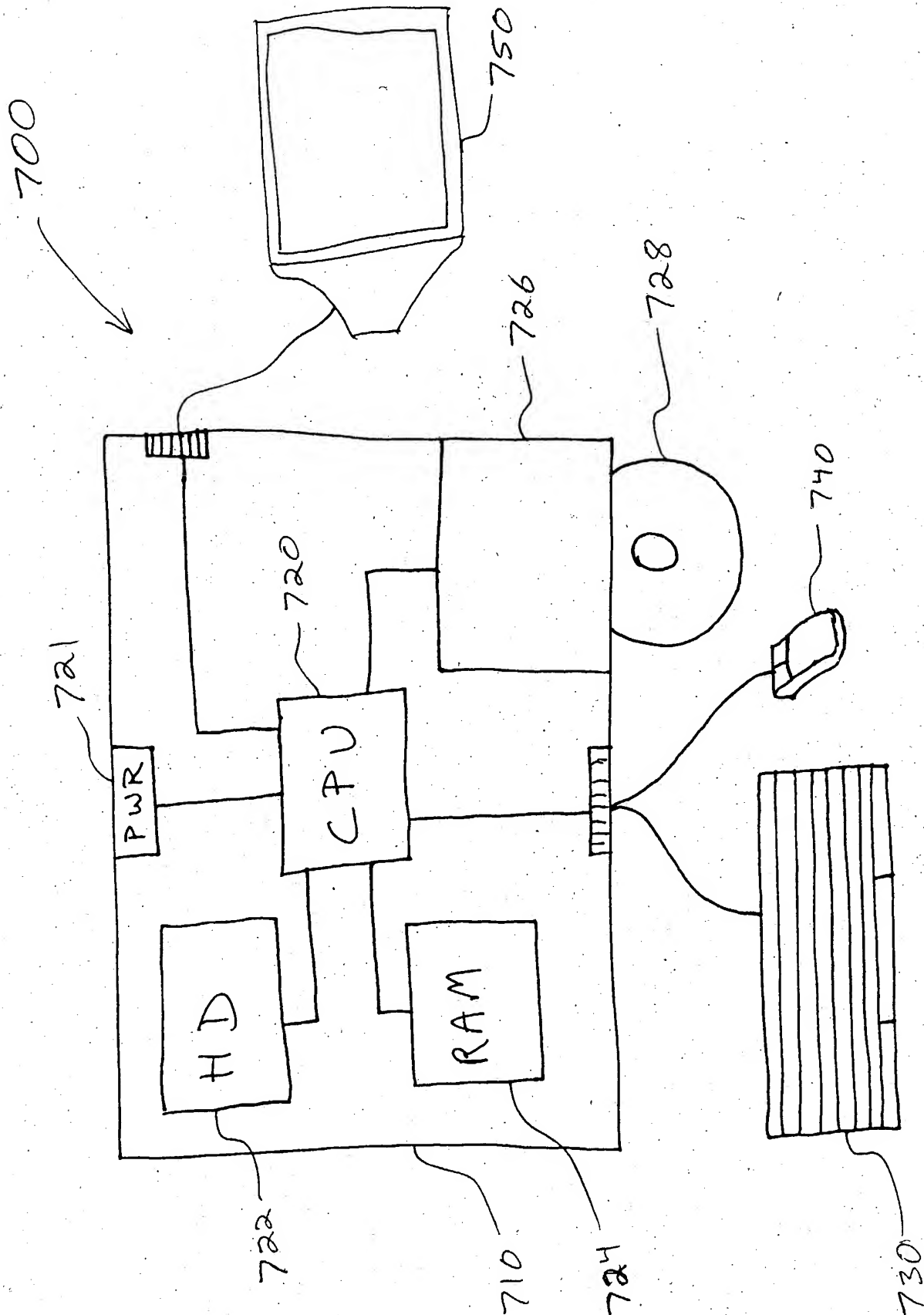
660

670

680

Figure 6D

037010-0106

Figure 7